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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,927	10/20/2000	Richard Stirling-Gallacher	450117-02828	8382
20999	7590	06/13/2005	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			PHU, PHUONG M	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/692,927

Applicant(s)

STIRLING-GALLACHER, RICHARD

Examiner

Phuong Phu

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This Office Action is responsive to the RCE and Amendment filed on 4/26/05.

#### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 27 recites the limitation “only the outputs normalized with one of said normalizations unit are normalized with the time constant normalization factor”. The description of this limitation is conflicted with the limitation “only a subset of said outputs is normalized with one of said normalization unit and a remaining subset of outputs is normalized with a time constant normalization factor”, recited on lines 8-10 of claim 25.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 25-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites the limitation “said normalization units” on lines 8-9. This limitation is lack of antecedent basis.

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Claims, depended on the above claim, are therefore also rejected.

5. Claims 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Claim 11 omits functional/structural/connectional interrelationship of elements of “normalization units” and “respective decoding unit” (recited on lines 6-7) with elements of “decoding units” (recited on line 3) and “a normalization unit” (recited on lines 8-9) for making the claimed turbo decoder as a complete operative and connective system.

Claims, depended on the above claim, are therefore also rejected.

6. The following rejections are made based on the examiner’s best understanding about the claimed methods and systems.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 11-30 are rejected under 35 U.S.C. 102(a) as being anticipated by the prior art being admitted by the applicant in the Specification of the instant application, (from now referred as “the admitted prior art”).

-Regarding to claim 11, see figure 3, and pages 2 and 3 of the Specification, the admitted prior art discloses a Turbo decoder comprising:

a plurality of decoding units (including (25, +) and (30, 31); and

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a number of normalization units (including (C1, x) and (C2, x) each located at an output side of a respective decoding unit (including (25,+) and (30, +));

wherein only a subset (25, +) of the plurality of decoding units has a normalization unit (C1, x) associated therewith at its output side.

-Regarding to claim 12, the admitted prior art discloses that a decoding unit (28, 30, 31) not having a respective normalization unit associated therewith at its output side (32) is provided with data representative of a normalized output from the normalization unit (C1, x) of a preceding decoding unit (25, +) of the subset.

-Regarding to claim 13, the admitted prior art discloses that the plurality of decoding units include a first decoding unit (25, +) and a second decoding unit (30, +) in which only the first decoding unit has a respective normalization unit (C1, x) associated at its output side.

-Regarding to claim 14, the admitted prior art Turbo decoder is inherently implemented for a communication system (see page 2, lines 5-10).

-Regarding to claims 15, 16, figure 3, and pages 2 and 3 of the Specification, the admitted prior art discloses a turbo decoding method comprising:

step (including (25, +) and (30, 31) of using a plurality of decoding units (including (25, +) and (28, 30, 31); and

step (including (C1, x) , (32)) of normalizing data obtained from each of the plurality of decoding units with a respective normalization factor in such a way means (C1, x) normalizes data outputted from decoding unit (25, +) with a normalization factor (C1) variable during operation (since value of C1 can be expressed with a formula given on lines 14-17, page 2 of the

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specification) whereas decoding unit (28, 30, 31) can be considered being normalized by means (31) with a normalization factor of value equal 1);

therefore, it can be said that the data obtained from use of only a subset (25, +) of the plurality of decoding units are normalized with a normalization factor (C1) variable during operation and the data obtained from use of the other one(s) (28, 30, 31) of the plurality of decoding units are normalized with a time constant normalization factor of value equal 1.

-Regarding to claim 17, the admitted prior art discloses that only the one(s) (28, 30, 31) of the plurality of decoding units provided with data representative of a normalized output from the respective normalization unit (C1, x) of a preceding decoding unit (25, +) of the subset are normalized with the time constant normalization factor.

-Regarding to claim 18, the admitted prior art discloses that the plurality of decoding units include a first decoding unit (25, +) and a second decoding unit (28, 30, 31), and

wherein the data obtained from use of the first decoding unit is normalized with the normalization factor (C1) variable during operation and the data obtained from use of the second decoding unit is normalized with the time constant normalization factor.

-Regarding to claim 19, the admitted prior art discloses that the normalization factor (C1) is calculated on the basis of means and variance of extrinsic information produced by an associated decoding process (see lines 14-17, page 2 of the specification).

-Regarding to claim 20, the admitted prior art disclose that the plurality of decoding units are arranged in a parallel manner to enable the method to be performed as a parallel concatenated scheme (see figure 3).

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-Regarding to claim 21, see figure 3, and pages 2 and 3 of the Specification, the admitted prior art discloses a turbo decoder comprising:

a decoding unit (25, +); and

a normalization unit (C1,x) located at an output side of the coding unit (output of (+));

wherein said decoding unit is used a plurality of times, each of said plurality of times generating an output in such a way that at one of the times, means (25) generates a first output and at another of the times, means (+) generates a second output based on the first output , and

wherein only a subset of said outputs (output of (+)) is normalized with the normalization unit.

-Regarding to claim 22, the admitted prior art discloses that a decoding unit (28, 30, 31) not having a respective normalization unit associated therewith at its output side is provided with data representative of a normalized output from the normalization unit (C1,x) of a preceding decoding unit (25, +) output of the subset.

-Regarding to claim 23, the admitted prior art disclose that the plurality of generated outputs from said decoding unit includes a first output (output of (+)) and a second output (output of (25)), in which only the first output has a respective normalization unit (C1,x) associated therewith at its output side.

-Claim 24 is rejected with similar reasons set forth for claim 14.

-Regarding to claims 25, 26, 28, see figure 3, and pages 2 and 3 of the Specification, the admitted prior art discloses a method comprising:

step (25, +) of using a decoding unit (25, +); and

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step (C1,x) of normalizing data obtained from a normalization unit (C1,x) with a respective normalization factor variable (C1),

wherein said decoding unit is used a plurality of times, each of said plurality of times generating an output in such a way that at one of the times, means (25) generates a second output and at another of the times, means (+) generates a first output based on the second output, and

wherein only a subset, (the first output ), of said outputs is normalized with said normalization unit (C1,x) and a remaining subset (the second output) of outputs can be considered being normalized by means (25) with a time constant normalization factor of value 1.

-Regarding to claim 27, the admitted prior art discloses that only a subset, (the first output ), of said outputs is normalized with said normalization unit (C1,x).

-Claim 29 is rejected with similar reasons set forth for claim 19.

-Claim 30 is rejected with similar reasons set forth for claim 20.

### ***Response to Arguments***

9. Applicant's arguments filed on 4/26/05 have been fully considered. However, claims 11-30, after being amended or newly-added, are deemed not patentable because of reasons set forth above in this Office Action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (6:30-2:30).



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Phuong Phu*  
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05/24/05

**PHUONG PHU**  
**PRIMARY EXAMINER**

Phuong Phu  
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Art Unit 2631